BLACK WALNUT

Juglans nigra L.

plant symbol = JUNI

Contributed by: USDA NRCS New York State Office

Robert H. Mohlenbrock
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Northeast Wetland Flora
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Uses
Traditionally the dark colored wood was used for gun stocks, fencing, airplane propellers, and cabinetry. Today the high valued wood is utilized for some of the finest quality furniture. The large nuts produced by this tree are consumed by wildlife and humans.

Status
Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description
Black walnut usually matures in about 150 years. An average site will produce mature black walnut trees which are 70 to 80 feet in height and attain diameters of 2 to 4 feet when grown in a forest stand. On the best sites this tree may reach up to 150 feet tall and over 8 feet in diameter. When grown at low stocking or in open fields, black walnut produces a short, wide spreading crown.

A deep, wide spreading root system supports this large tree. Mature trees have a deeply furrowed gray-brown to nearly black bark. The brown to orange-brown twigs are stout, with large, shield shaped, conspicuous leaf scars. The deciduous leaves are 1 to 2 feet long, alternate, and compound. The 15 to 23 leaflets are stemless, unequally rounded, and wider at the base than at the pointed tips.

Unisexual flowers emerge on black walnut from mid-April to mid-June, appearing with the leaves on a separate inflorescence of the same tree. A globular fruit is produced which contains a corrugated nut in its yellowish-green husk. The nut is usually 1 1/2 to 2 1/2 inches in diameter, containing an oil-rich, sweet, and edible seed. The large fruit ripens between September and October. Upon ripening the husk softens and turns dark brown to black.

Adaptation and Distribution
Found throughout the eastern U.S., black walnut thrives in deeper, well drained, neutral soils. Black walnut is a shade intolerant species, and must have direct sunlight to grow optimally. It requires about 35 inches of annual precipitation, an annual average temperature of about 55 degrees F., with no less than 170 growing days for optimum growth and development. This species survives beyond its ideal site requirements as it approaches the limits of its native range. Black walnut is found naturally growing from Vermont to Minnesota, south to Florida and Texas.

When acquiring planting stock it is important to utilize local or regional sources, since climatic variation has been noted.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment
Seed dormancy is broken by natural over-winter freezing and thawing conditions or artificially with cool moist stratification.

Natural: Shortly after leaves fall from the tree, the nuts fall. This species is naturally distributed by various wildlife, as they store nuts in the soil for winter. After the freezing and thawing of winter, those nuts not consumed by wildlife will normally germinate the first or second spring. On good sites, seedlings will grow 3 feet the first year and double that the second year.

Nursery: Propagating seedlings under nursery conditions is a viable choice, but precautions must be taken to protect against rodent predation. Direct seeding onto raised beds or at a site will lead to productive results. Seedlings should be distributed as 1/0 bare-root or containerized stock. On fertile nursery soils, black walnut should not require additional nutrients for adequate growth.

Pests and Potential Problems
European canker and walnut caterpillar are the only two pests documented to attack black walnut.

Cultivars, Improved, and Selected Materials (and area of origin)
Over 100 varieties of black walnut have been selected for their nut quality, but most commercially available seedlings are produced from local collections. Specific varieties are typically propagated from grafts.

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